

**REMARKS**

**Formal Matters**

Claims 1, 2, and 4-16, and 45-46 are pending.

Claims 1, 2, 4-16, 45, and 46 were examined. Claims 1, 2, 4-16, 45, and 46 were rejected.

Claims 1, 2, and 10 are amended for clarity. The amendments to the claims were made solely in the interest of expediting prosecution, and are not to be construed as an acquiescence to any objection or rejection. Support for the amendments to the claims is found in the claims as originally filed, and throughout the specification, in particular at the following exemplary locations: page 16, lines 24-27, and as exemplified by Figure 4.

Accordingly, no new matter is added.

**Claim rejections under 35 U.S.C. § 102**

***U.S. Application No. 09/775,387***

Claims 1, 2, 4-16, 45-46 have been provisionally rejected under 35 U.S.C. § 102(e) as being anticipated by copending Application No. 09/775,387 ('387), which is also owned by the Assignee of the present application. This rejection is respectfully traversed.

The copending '387 application is directed to a method of using an addressable array that comprises retrieving "biological function data" for the biopolymers from a memory and using such "biological function data" in reading the array or processing results from the read array. Specifically, the biological function data refers to information on the function of the target or its complement, or the gene from which they originated (Specification ¶ 0039). The disclosure notes that such biological function information is used by the user in reading the array or processing the results from the read array (¶ 0039).

In contrast, the claimed invention is directed to a method of generating an addressable array of chemical moieties that includes saving into memory array related data which includes instructions on how to read an array or instructions on how to process data from a read array. The specification, on page 17, lines 29-31, states that the array processor

retrieves the array related data and uses the data to “either control reading of the array or to process information obtained from reading the array.” The specification further provides that this can be done by:

processor accessing a program routine normally used for reading the array or processing data from the read array based on the retrieved array related data. For example, the processor 162 may present the user with an opportunity for making one or more possible selections or alert the user to a selection (for example is warn against, or suggest against or in favor of), based on the retrieved array related data. One method of doing this is illustrated in FIG. 4. FIG. 4 is a screen which may be displayed on monitor 310. In FIG. 4 multiple possible selections of different algorithms for reading the array or processing read data from the array are shown. Selections A and B represent local background detection and automatic corner detection algorithms... Selections C and D represent algorithms for subtracting total detected signal from a feature due to non-target binding, by the use of data read from array features 16 containing negative control probe or deletion control probes. (Page 17, line 31 to page 18, line 12)

Accordingly, claims 1, 2, and 10 have been amended to clarify that the array related data comprises “any of machine readable instructions for use by a processor on how to read an array or machine readable instructions for use by a processor on how to process data from an array following reading of the array.”

Therefore, the claimed invention includes a step of saving into memory machine readable instructions on how to read and process data from a read array – not biological function information for the arrayed biopolymers used by a user. As such, the substance of the information saved in memory for the claimed invention is clearly different than the biological function information that is saved in a memory pursuant to the teachings of the ‘387 application.

It is well established that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” Verdegaal Bros. v. Union Oil Co. of California, 2 USPQ 2d 1051, 1053 (Fed.

Cir. 1987), cert. denied, 481 U.S. 1052 (1987). See also, Scripps Clinic and Research Foundation v. Genentech, Inc., 18 USPQ 2d 1001 (Fed. Cir. 1991).

Since the '387 application discloses the use of "biological function information" for use by a user rather than machine readable instructions for use by a processor on how to read an array or how to process data from a read array, the cited application fails to disclose every element found in the claims of the present invention. As such, claims 1, 2, 4-16, 45-46 are not anticipated under 35 U.S.C. § 102(e) by the '387 application. Therefore, the Applicants respectfully request that this rejection be withdrawn.

***U.S. Patent No. 6,180,351***

In addition, claims 1, 2, 4-16 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,180,351 to Cattell, which is also owned by the Assignee of the present application. This rejection is respectfully traversed.

U.S. Patent No. 6,180,351 ('351) is directed to a method of generating an addressable array of biopolymers and saving in memory information on the layout of the array (Column 5, lines 41-45). Specifically, such array layout information "refers to one or more characteristics of the array, such as feature positioning, feature size, and some indication of a moiety at a given location" (Column 6, lines 65-67).

As noted above, that which is saved to a memory according to the present application is "any of machine readable instructions for use by a processor on how to read an array or machine readable instructions for use by a processor on how to process data from an array following reading of the array." These instructions are clearly different from the information saved to a memory as discussed in the '351 patent. Accordingly, the substance of the information saved in memory of the '351 patent is clearly different then the array related data of the claimed invention.

In order for a cited reference to anticipate the claimed invention, the reference must disclose each and every element of the claimed invention. Since '351 fails to recite the element of machine readable instructions for use by a processor on how to read an array or

how to process data from a read array, the cited patent fails to disclose every element found in the independent claims of the present invention. As such, claims 1, 2, 4-16, 45-46 are not anticipated under 35 U.S.C. § 102(e) by the '351 patent. As such, the Applicants respectfully request that this rejection be withdrawn.

**Claim rejections under 35 U.S.C. § 103**

***Claims 1, 2, and 4-16***

Claims 1, 2, and 4-16 have been rejected under 35 U.S.C. § 103 as being unpatentable over Perttunen (U.S. Patent No. 5,968,728), in view of Ellson (U.S. Patent Application No. 2002/0086319A1, filed Nov. 13, 2000). Specifically, the Examiner states that it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the shipping of Ellson to the arrays of Perttunen, thereby rendering the claimed invention obvious. This rejection is respectfully traversed.

As previously noted, the present invention is directed to methods of generating arrays of chemical moieties by depositing the moieties onto regions of a substrate, saving in memory array related data which is made up of “any of machine readable instructions for use by a processor on how to read an array or machine readable instructions for use by a processor on how to process data from an array following reading of the array,” and shipping the fabricated array to a location remote from where the array was fabricated.

The law is clear that to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. In re Fine, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 21 USPQ2d 1941 (Fed. Cir. 1992). Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 231 USPQ 375 (Fed. Cir. 1986). Finally, the prior art reference, or references when combined, must teach or suggest all the claim limitations. In re Royka, 180 USPQ 580 (CCPA 1974).

The Examiner cites Perttunen and states that the reference teaches a method of

generating an addressable array of chemical moieties on a substrate as claimed in the present invention except that the reference does not teach shipping of the fabricated array to a remote location. However, the disclosure of Perttunen is limited to a method of generating an addressable array, wherein the arrays include mapping information corresponding to the arrayed molecules (see column 4, lines 61-67).

Therefore, in addition to not teaching shipping of the fabricated array to a remote location, Perttunen is also deficient in that it fails to disclose, teach or fairly suggest another element of the claimed invention – machine readable instructions for use by a processor on how to read an array or how to process data from a read array. Specifically, the substance of the information saved in memory of Perttunen is simply array mapping information, i.e., the identification of each moiety and its specific location on the array. In contrast, the information saved in memory of the claimed invention of present application consists of instructions for use by the processor on how to read an array or how to process data from a read array. Clearly, the substance of the information of the claimed invention is considerably different than that of Perttunen.

The Examiner also cites Ellson as teaching shipping the fabricated arrays to end users. Specifically, the Examiner states that Ellson teaches a method for generating an addressable array of chemical moieties comprising depositing moieties onto different regions of the substrate, saving in a memory array related data and shipping the array to a remote location. However, the Applicants stress that the disclosure of Ellson is limited to an array of molecular moieties on a substrate, where the substrate also contains machine-readable information, which includes shipping and billing information, the identity of the molecular moieties, information relating to the means by which the moieties were attached to the substrate, and suggested storage conditions relating to the molecular moieties. Therefore, Ellson also fails to teach or suggest the use of machine readable instructions for use by a processor on how to read an array or how to process data from a read array.

Clearly, the substance of the information provided with the arrays of Perttunen and Ellson is not the same as that of the claimed invention. The proposed claim amendments clarify that the information saved in memory is instructions for use by the processor on how to read the array or how to process information from a read array. The array related

information of the claimed invention is more than simply billing/shipping information and array mapping information. Accordingly, Ellson fails to meet the deficiency of Perttunen.

Therefore, Perttunen and Ellson taken alone or in any combination, fail to teach at least one element of the claimed invention – machine readable instructions for use by a processor on how to read an array or how to process data from a read array. Since the cited references fail to teach an element of the rejected claims, the cited references fail to render the claimed invention obvious.

As such, claims 1, 2, 4-16 are not rendered obvious under 35 U.S.C. § 103 by Perttunen in view of Ellson. Therefore, the Applicants respectfully request that this rejection be withdrawn.

#### ***Claims 45 and 46***

Claims 45 and 46 have been rejected under 35 U.S.C. § 103 as being unpatentable over Perttunen in view of Ellson, and further in view of Zelany (U.S. Patent No. 6,215,894). In making the rejection, the Examiner states that it would have been obvious to modify the information taught by Perttunen and Ellson to include information on whether a control probe was present on an array as taught by Zelany. These rejections are respectfully traversed.

As noted above, Perttunen and Ellson taken alone or in any combination, fail to teach at least one element of the claimed invention – machine readable instructions for use by a processor on how to read an array or how to process data from a read array. Since Zelany is cited solely for its disclosure of including data on the presence or absence of a control probe, the cited combination still fails to make up the deficiency of the substance of the machine readable instructions of the claimed invention. As noted above, the machine readable information of the claimed invention is more than mere billing/shipping information and array mapping information; it includes instructions for use by a processor on how to read an array or how to process data from a read array.

Therefore, since the cited combination of references still fails to teach an element of the rejected claims, they fail to render the claimed invention obvious. As such, the

Applicants respectfully request that the rejection of claims 45 and 46 under 35 U.S.C. § 103 be withdrawn.

**Obviousness-Type Double Patenting Rejection**

***U.S. Patent No. 6,180,351***

Claims 1, 2, and 4-16 have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Pat. No. 6,180,351. Specifically, the Examiner states that the conflicting claims are “not patentably distinct from each other because both sets of claims are drawn to a method of generating an addressable array and differ only in the patent claims recite the additional method step (a) of receiving from a remote station information on a layout of the array and associated identifier and (e) forwarding a second copy of the local identifier to the remote station.” In view of the amendments to the claims of the present application and the remarks below, this rejection is respectfully traversed.

As noted above, the ‘351 patent is directed to a method of generating an addressable array of biopolymers and saving in memory information on the layout of the array (Column 5, lines 41-45). Furthermore, such array layout information “refers to one or more characteristics of the array, such as feature positioning, feature size, and some indication of a moiety at a given location” (Column 6, lines 65-67).

In contrast, that which is saved to a memory according to the present application is “any of machine readable instructions for use by a processor on how to read an array or machine readable instructions for use by a processor on how to process data from an array following reading of the array.” These instructions are clearly different from the information saved to a memory as discussed in the ‘351 patent. Therefore, the substance of the information saved in memory of the ‘351 patent is clearly different then the array related data of the claimed invention, thereby rendering the claimed invention patentably distinct from the ‘351 patent.

Since the claims of the present application and that of the ‘351 patent are patentably

distinct, the Applicants respectfully request that this rejection be withdrawn.

***U.S. Application No. 09/775,387***

Claims 10 and 13 have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 21-24 of copending Application No. 09/775,387. The Examiner notes that “although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to a method of generating addressable arrays of biopolymers and differ in the arrangement of the claimed limitations.” In view of the amendments to the claims of the present application and the remarks below, this rejection is respectfully traversed.

As previously discussed, the copending ‘387 application is directed to a method of using an addressable array that comprises retrieving “biological function data” for the biopolymers from a memory and using such “biological function data” in reading the array or processing results from the read array. Such the biological function data refers to information on the function of the target or its complement, or the gene from which they originated (Specification ¶ 0039). Specifically, claim 21 of the ‘387 application states, “saving in a memory data on the identity of the biopolymers in each array in association with the corresponding identifier.”

In contrast, claim 10 of the present application is directed to a method of generating an addressable array of chemical moieties that includes saving into memory array related data which includes **instructions on how to read an array** or **instructions on how to process data from a read array**. These instructions are clearly different from the “identity of the biopolymers” saved to a memory of claim 21 of the ‘387 application. Therefore, the substance of the information saved in memory of the ‘351 patent is clearly different than the array related data of the claimed invention, thereby rendering claims 10 and 13 of the present application patentably distinct from claims 21-24 of the ‘387 application.

Since the claims of the present application and that of the ‘387 Application are patentably distinct, the Applicants respectfully request that this rejection be withdrawn.




**CONCLUSION**

The Applicants respectfully submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone Gordon Stewart at (650) 485-2386. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16 and 1.17 which may be required by this paper, or to credit any overpayment, to Deposit Account No. 50-1078.

Respectfully submitted,

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